MONTANA
Department of Public Health & Human Services

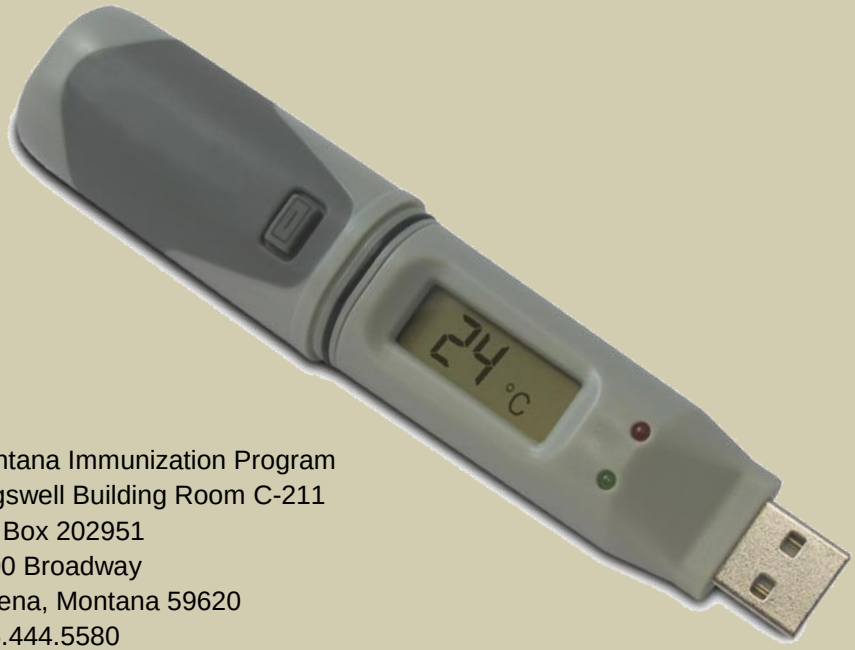
Immunization Program

Data Logger

Instruction Manual

Updated for the VFC 6000

(Revised 4/2012)



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1. INTRODUCTION

The Montana Immunization Program requires Vaccines for Children (VFC) providers to have a certified calibrated, continuously monitoring thermometer in each vaccine storage unit and supplies VFC-6000 Data Loggers (Data Loggers) to fulfill this requirement. Data Loggers are electronic thermometers that continuously record and store temperature readings and indicate through a warning light when out-of-range temperatures have recorded. Data Loggers interface with a computer so that temperature data can be removed from the device and saved.

2. DATA LOGGER TECHNICAL ASSISTANCE

Written Documentation

Montana Immunization Program Data Logger Instruction Manual—This is the document you are reading and is a step-by-step instruction guide for setting up, using, and downloading your data according to Montana Immunization Program requirements. Current versions are available on our website at www.immunization.mt.gov.

VFC-6000 LCD Specifications—This can be found on the Control Solution website and on the EasyLog software disk that came with your Data Logger. It details the specifications of the VFC 6000 including information for interpreting the LCD display and LED warning lights (http://www.vfcdataloggers.com/vfc6000.aspx).

VFC-6000 Manual—This can also be found on the Control Solution website (http://www.vfcdataloggers.com/vfc6000.aspx) and is a comprehensive (20 page) manual for general use of the VFC 6000 data logger. It describes all functions and parameters, not just those required by the Montana Immunization Program.

Telephone and Email Assistance

For technical support by phone or email contact the Montana Immunization Program at 444-5580 hhsiz@mt.gov or Control Solutions, our data logger supplier:

Supporting Documents

Temperature logs and Vaccine Incident Reports can be obtained from our website at www.immunization.mt.gov under the VFC link.

3. REQUIRED ITEMS

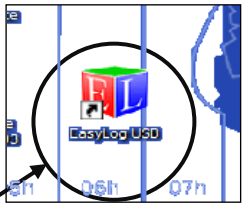
- State-supplied Data Logger with an extra battery, acrylic cap and stand, small CD with software, *Quick Start Guide*, certificate of calibration, and registration card for warranty and re-calibration notification.

- Windows-based computer with USB port
- Temperature Logs and Vaccine Incident Reports (available on our website at www.immunization.mt.gov under the VFC link)

4. LOADING SOFTWARE

1. Install the Data Logger software by following the *Quick Start Guide* that came with your device. Be sure to complete Step 7, installing the device driver, before finishing the installation.

2. At Step 2 of the *Quick Start Guide*, use the instructions in this manual to set up and use your Data Logger.



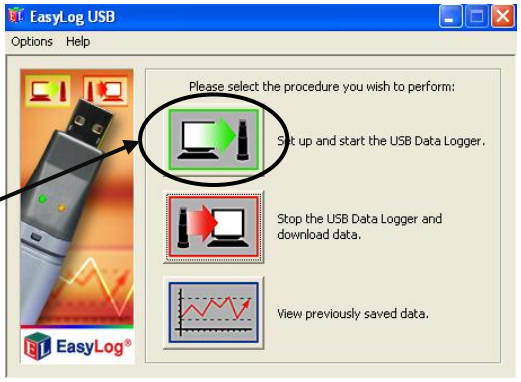
5. DATA LOGGER SET-UP

Set up your Data Logger before first use and after downloading data by following the instructions below:

3. If it is not already running, launch the Data Logger software by double clicking on the EasyLog USB icon on your desktop.

   Remove the acrylic cap and insert the Data Logger into the USB port of your computer.

   From the EasyLog USB main menu, click on the green arrow "Set up and start the USB Data Logger."



4. Name your Data Logger. Differentiate your freezer and refrigerator devices in the name and by marking “R” or “F” on the outside of the device.

   Set the device to read in Fahrenheit (F°). Be sure to obtain a temperature log from our website (www.immunization.mt.gov) specific to the Fahrenheit scale (F).

   Please note: Providers can log temperatures in Celsius, but imMTrax requires temperatures be reported in Fahrenheit. If recorded in Celsius, logged temperature would require conversion before reporting in imMTrax.

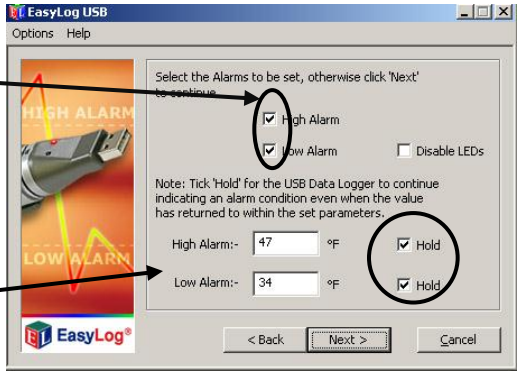
   Select a sample rate of “5 Min (56 days).” The sample rate is how often your Data Logger records the temperature. The number in parentheses is the number of days of data the device can store at that sample rate. Click “Next.”

5. On this screen, set the display function by selecting “LCD on for 30 seconds after button pressed.” This setting will save battery power by inactivating the LCD display except when you press the button to read the temperature.

   On the same screen, select the “Logger stops (recommended)” setting to prevent data from being overwritten if the device memory is full. Click “Next.”

6. On the next screen, set your high and low alarm points by first checking the boxes. Leave the “Disable LEDs” unchecked.

7. Then set the temperature for each alarm point as follows:



Refrigerator:	Fahrenheit	High 47°	Low 34°
	Celsius	High 8.5°	Low 1.5°
Freezer:	Fahrenheit	High 6°	Low -31°
	Celsius	High -14.5°	Low -35°

Please Note: The out-of-range alarm points are 1 degree (F) and 0.5 degree (C) *outside* the recommended storage temperatures for vaccines.

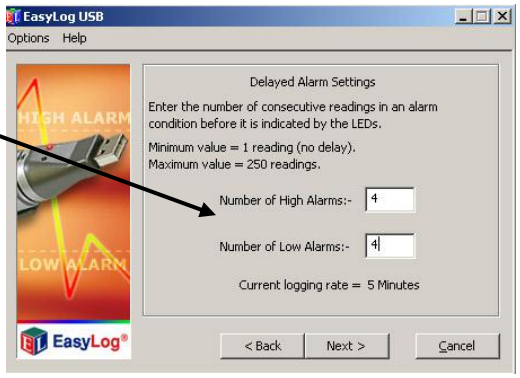
Check “Hold” for each alarm point. Click “Next.”

8. On this screen, set the Alarm Delay, a new feature to the VFC 6000 that allows you to set the number of consecutive out-of-range readings that must be logged before the red out-of-range warning light is activated.

   As a starting point, we recommend 4 readings (15 minutes at a 5 minute sampling rate) for the high and low alarms for both refrigerators and freezers.

   All storage units have unique cycling characteristics and this parameter can be adjusted (within guidelines) to accommodate these fluctuattions: High alarm delays can be adjusted as long as 13 (1 hour) for freezers and 7 (30 minutes) for refrigerators.

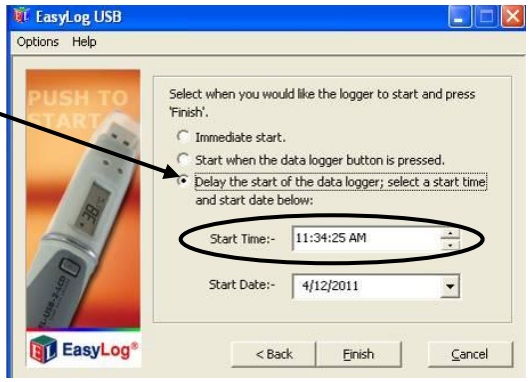
   Please contact the Immuinzation Program before adjusting this parameter away from recommended values.



9. On the final screen, set the start mode for your Data Logger by selecting "Delay the start of the Data Logger…."

   Then set the start time one hour from the current time. This is important. If the Data Logger starts recording before it has acclimated in the storage unit, it will register out-of-range temperatures and may activate the out-of-range temperature light.

   Click "Finish" and then "OK." Your Data Logger is now ready for use.



10. Immediately remove the Data Logger from your computer, replace the acrylic cap, set it in the acrylic stand, and centrally locate the device in the storage unit near your VFC vaccine.

    Be sure to put the Data Logger set for the refrigerator in the refrigerator and the Data Logger set for the freezer in the freezer.

    As with your vaccine, keep the Data Logger away from ceilings, walls, vents, fans, and coils.

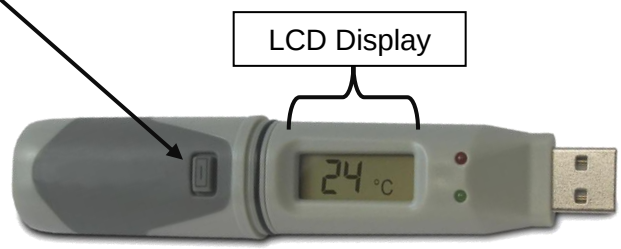
6. READING YOUR DATA LOGGER

Data Logger temperatures (LCD display) and warning lights (LEDs) must be checked and recorded on a temperature log (or in imMTrax – temperatures only) **twice daily.**

11. To check the temperature, press the button on the side of the Data Logger ONCE. The current temperature will appear on the LCD display (the display may be slightly delayed on freezer devices due to low temperatures).

    Pressing the button a second time within 30 seconds of the first press displays the highest temperature recorded (▲).Pressing the button a third time within 30 seconds of the second press displays the lowest temperature recorded (▼). A fourth press brings it back to the current temperature. The display will go blank 30 seconds after the last button push.

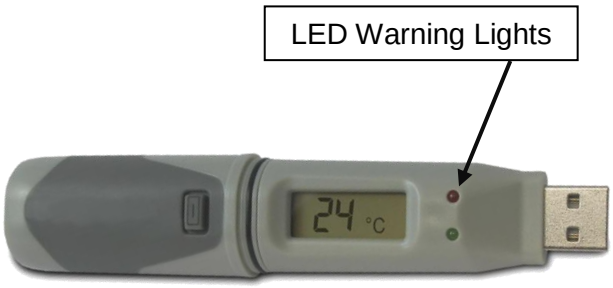
    Mark the current temperature on the temperature log.



12. After logging the temperature, check the status of the LED lights. (You may have to wait 10–30 seconds for the lights to blink.)

    If the light blinks green, place an X in the appropriate place on the temperature log. If the light takes longer than 10 seconds to flash, refer to the chart in Section 10 for further guidance.

    If the light blinks red, out-of-range temperatures have been encountered. Immediately download and review the Data Logger data by following the instructions in the next section. Refer to the chart in Section 10 for further guidance.



7. DOWNLOADING, REVIEWING, AND SAVING DATA

Data Logger data must be downloaded, reviewed, and saved at **least once per month** or whenever out-of-range temperatures are recorded or the LED warning light blinks red.

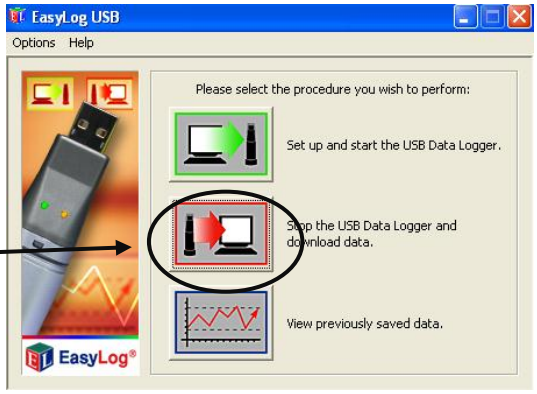
13. Launch the Data Logger software by double clicking on the EasyLog USB icon on your desktop.

    Connect your Data Logger to a USB port on your computer.

    Click on the red arrow icon "Stop the USB Data Logger and download data."

    Answer "Yes" on the pop-up window. On the next screen, click "OK."

    Please note: If your battery is low, you may get a low battery warning when you plug the Data Logger into your computer. Replace the battery if this occurs (see Section 9).

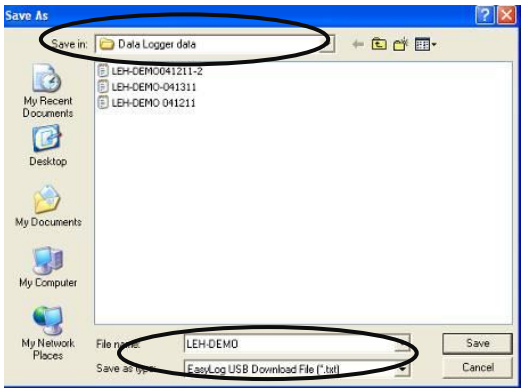


14. On the next screen, choose where you will store your data.

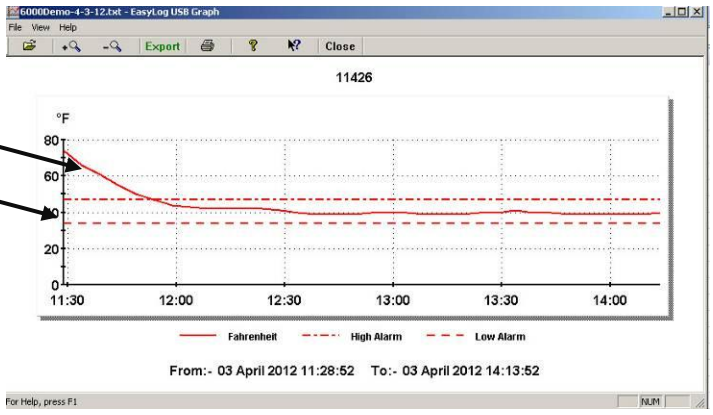
    Give the current file a unique name. The name field will automatically fill with the device name you designated in Step 4. We recommend adding the date to make it unique. (Example: "VFC Refrigerator 04-12-2011")

    Please Note: If you do not give the data file a *unique* name, you will overwrite any previously downloaded files with the same name.

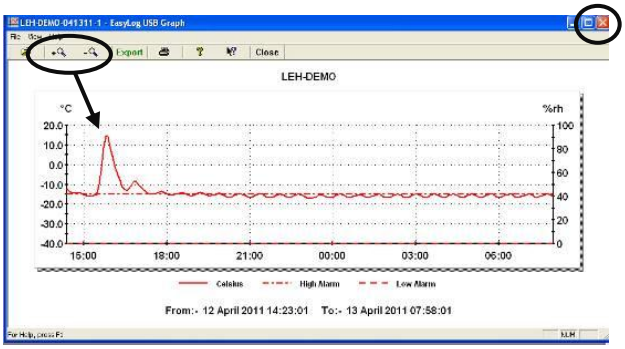
    Click "Save." The file will be saved in the location specified.



15. After saving the data file, a graph will launch that displays temperature recordings plotted over time (solid red "trace") and dotted lines indicating the high and low alarm settings.



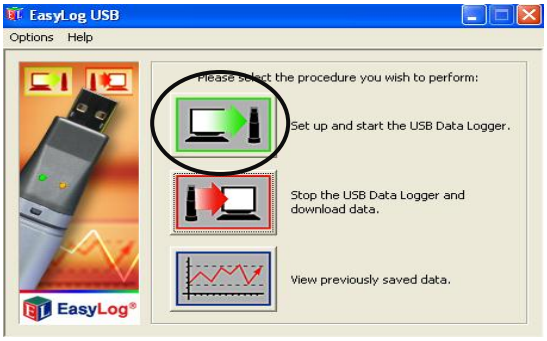
16. Review the temperature data. Use the magnifying tool to examine any out-of-range readings.



Immediately obtain a Vaccine Incident Report (www.immunization.mt.gov) and follow the instructions when out-of-range temperatures occur*. Also contact the Immunization Program (444-5580 hhsiz@mt.gov)

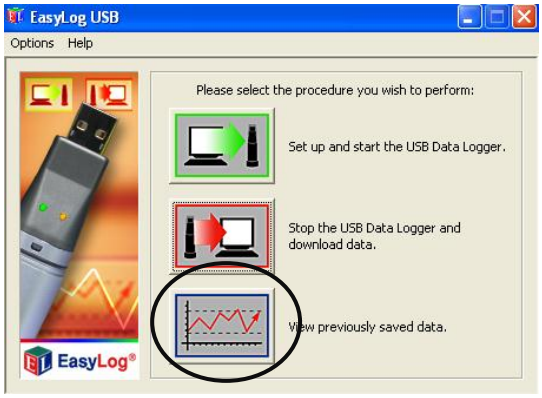
***Please Note:** Frost-free freezers are programmed to cycle to warmer temperatures on a regular schedule. This is acceptable for vaccine storage within certain parameters. Please contact the Immunization Program (444-5580 hhsiz@mt.gov) for current freezer defrost specifications and guidance in adjusting your Data Logger to accommodate these cycles.

After saving and reviewing the data, close the graph by clicking on the red X in the right corner. This returns you to the EasyLog USB main menu.



17. Reset the Data Logger and return it to the storage unit by following the instructions under "Data Logger Setup" on page 4.

18. To review previously saved data, launch the EasyLog USB software and click on the graph icon "View previously saved data."



This will take you to the folder containing your saved data. Select a file and click "Open." The graph will launch.

19. You are required to submit your twice-daily temperature logs in imMTrax, but you are not required to send your Data Logger data to the Immunization Program. However, you may need to send your data if a temperature excursion occurs or you need help interpreting your data.

To send Data Logger data to the Immunization

Program, attach the data file to an email or print and Fax the graph. Data Logger data files will have the unique name you designated upon download and the file extension .txt.

Contact the Immunization Program (444-5580 hhsiz@mt.gov) before sending your data for review.

8. DATA LOGGER WARRANTY AND CALIBRATION

Unless otherwise instructed, VFC Providers are responsible for re-calibrating their State-supplied Data Loggers on an annual basis and replacing broken devices with an equivalent unit (See *Montana Immunization Program VFC Provider Handbook/Vaccine Management Plan* Section 14, page 54). Providers can use a vendor of their choice for re-calibration and replacement.

Control Solutions, our Data Logger supplier, offers a warranty and re-calibration notification program. For more information on this program, please refer to the white card titled “Data Logger Warranty & Calibration Registration” that came in the box with your Data Logger.

9. BATTERIES

State-supplied Data Loggers come with a fresh battery installed and one extra battery in the cardboard box.

Battery Life

For Data Loggers programmed according to Montana Immunization Program recommendations, new batteries should last approximately one year.

Circumstances that may affect battery life:

- Leaving the device plugged into a computer USB drive for an extended period of time
- Programming the LCD to display continuously (Step 5, page 5 – not recommended)
- Programming the Data Logger at a higher-than-recommended sampling rate (Step 4 – 5 minutes recommended)

Low or Dead Battery Indications:

- Single green or red light blinking at 20 second intervals (in contrast to the normal 10 second intervals – see table in Section 10)
- No LCD display or LED warning lights
- Low battery pop-up warning when you plug the Data Logger into the computer.

Changing the Battery:

- Use a sharp point to press the silver tab on the back side of the Data Logger directly behind the LCD display.
- Slide the lower plastic sleeve off the unit.
- Remove the battery and replace with a new one making sure that the poles (+ -) are properly oriented.
- Replace the plastic sleeve.

10. LCD DISPLAY AND LED WARNING LIGHT EXPLANATIONS

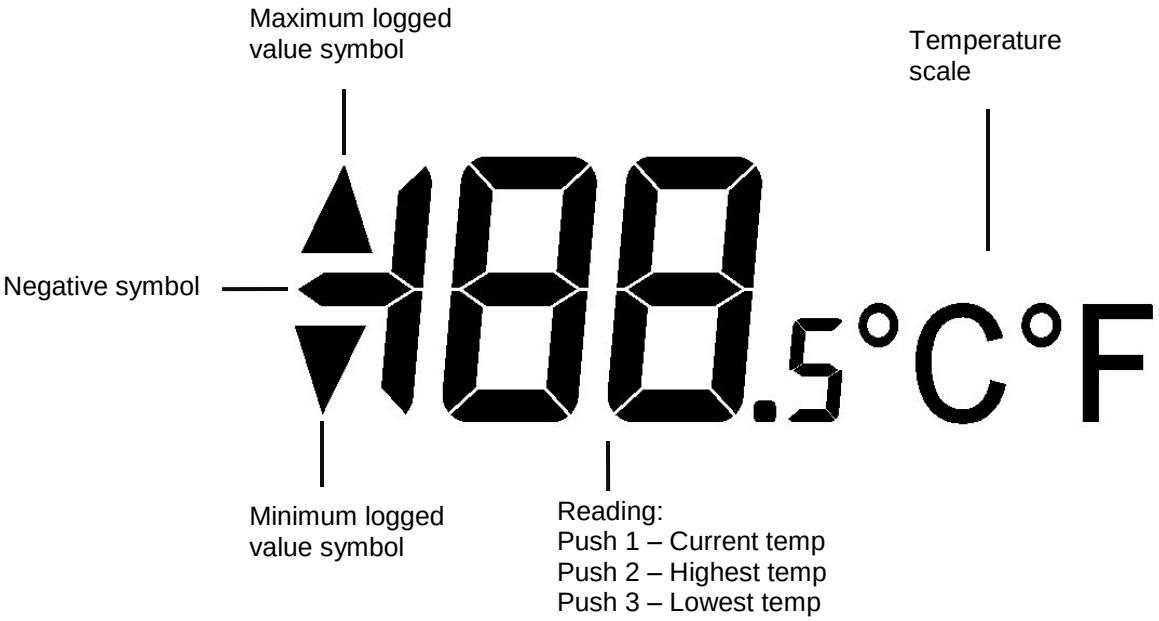


Figure 1 VFC 6000 LCD Display

Table 1 LCD Status Displays and Explanations

LCD Display	Logger Status	Explanation
dS	Delayed Start	This is shown when the logger is set to start at a specific date and time.* (Recommended)
PS	Push to Start	This is shown when the logger is set up for “Push to start” logging
log	Logging	This is shown when the logger is running in “LCD off” mode, and the button is pressed. The display clears again after three seconds
- - -	Stopped	If the logger has not been set to log and the button is pressed, three dashes are displayed for three seconds. (Forgot to reset after download).

* If the logger is set to “LCD off” or “LCD on for 30 seconds” mode, then this will only be shown after the button is pressed. Otherwise the display will remain blank.

Table 2 LED Warning Light Explanations

LED Warning Light Status	Explanation
	Green single flash (10 seconds) The data logger is currently logging. No alarm.
	Green single flash (20 seconds) The data logger is currently logging. No alarm. However, the battery is low and should be replaced before logging important data.
	Green single flash (30 seconds) The data logger is not currently logging, but is primed to start at a later date and time (delayed start).
	**Green double flash (20 seconds)** The data logger is full and has stopped logging. No alarm.
	Red single flash (10 seconds) The data logger is currently logging. Low alarm.
	Red single flash (20 seconds) The data logger is currently logging. Low alarm. However, the battery is low and should be replaced before logging important data.
	**Red double flash (10 seconds)** The data logger is currently logging. High alarm.
	**Red double flash (20 seconds)** The data logger is currently logging. High alarm. However, the battery is low and should be replaced before logging important data.
	**Red/Green single flash (20 seconds)** The data logger is full and has stopped logging. Alarm (high, low or both).
	**No LEDs flash** The data logger is stopped, the battery is empty or there is no battery fitted.